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Commentary

Unfit to Learn

As Schools Cut Physical Education Programs, Classrooms May Feel the Impact

By John P. Allegrante

Growing evidence suggests that the nation's health and education goals are inextricably linked: Students with health problems simply aren't as ready or as capable to learn.

In mid-October, National Health Education Week was on the school calendar. But making the case for celebration was a decidedly mixed affair: The good news is that schools raised awareness among children, educators, and parents across the country about the importance of good nutrition, regular and lifelong physical activity, and other vital aspects of a healthy lifestyle. The bad news is that, under the budget priorities dictated by the federal standardized-test requirements in reading and math under the No Child Left Behind Act, our schools—the most logical point of intervention to ensure the health of our children—are perversely cutting health and physical education programs to the detriment of young people's health and learning.

It is already apparent that an entire generation of inactive children and adolescents is at pronounced and growing risk of developing a host of serious and costly diseases in later life. The poor fitness of today's students is beyond dispute. America's young people are fat. We now have 9 million overweight children in the United States, or about 15 percent of the nation's children and teenagers, triple the total in 1980.

That's alarming enough, but it gets worse. The numbers of overweight and obese children are leading to an epidemic of diabetes, the country's fifth leading cause of death. The prevalence rate of diabetes is now projected to increase by 165 percent—to some 30 million Americans—by the year 2050. And the true figure could end up being much higher if the nation's Latino population, in which diabetes is diagnosed at twice the national rate, continues to grow at its current pace.

Hidden within those statistics is an even more disturbing trend: the growing epidemic among American youths of what's normally called "adult onset" diabetes, or Type 2 diabetes. Typically a disease that strikes middle-aged adults, Type 2 diabetes is a condition in which the body doesn't respond properly to insulin, or simply fails to produce enough of it to help metabolize blood sugar. While the causes of this new epidemic are complex, we do know that consuming high-fat, super-sized fast-food meals and soft drinks with high sugar content; watching television for long stretches of the day; and being physically inactive are

contributing to children's being overweight and obese, precursors to Type 2 diabetes. The substitution of fast-food venders and corporate-sponsored vending machines for nutritious cafeteria meals in many schools exacerbates the problem.

This is important because poor diet and physical inactivity are now recognized by federal health authorities as the second leading cause of mortality among adults behind tobacco use—and they are on pace to surpass tobacco by 2010 as the nation's *leading cause* of preventable death.

Schools do have an important—perhaps critical—stake in children's health if they want to achieve academic goals.

People generally understand this physical threat. Type 2 diabetes among children was virtually unheard of a decade ago. Now samples from various community-health clinics suggest that among newly diagnosed patients with diabetes, at least 8 percent are children with the Type 2 form of the disease. This can be part of a metabolic syndrome that will contribute to increased risk for heart disease in adulthood. Long-term complications from diabetes also include nerve damage, blindness, kidney failure, and the need for amputation. The national financial burden from this disease already stands at $132 billion per year, including about $40 billion in lost productivity, and the figure is expected to rise to $200 billion by 2020.

But what many people don't realize—and what many policymakers don't seem to want to accept—is that the consequences of poor fitness among children go beyond the nation's physical and financial health. Simply put, health and fitness *influence learning*.

Physical activity boosts self-discipline, reduces stress, strengthens peer relationships, enhances self-confidence and self-esteem, and improves mental alertness. Now, growing evidence suggests that the nation's health and education goals are even more inextricably linked: Students with health problems simply aren't as ready or capable to learn. A study of hundreds of thousands of 5th, 7th, and 9th graders conducted in 2002 by the California Department of Education offers the most convincing anecdotal support for this idea. Physically fit youngsters in the study posted significantly higher scores on math and reading tests, and those who met minimum fitness levels in three or more areas showed the greatest gains in academic achievement.

Why? Brain research shows that between the ages of 2 and 10, synaptic connections between neurons in the brain reach their highest density, and that the proliferation of synapses between certain neurons is moderated by sensory and motor experiences. Thereafter, the brain preserves the synaptic connections that are most used, while others fade.

More specifically, many studies show that cognitive performance is improved by aerobic activity, which increases the number of capillaries in

the brain and thus facilitates the transport of oxygen and the removal of waste products such as carbon dioxide. And other studies now suggest that the cerebellum, an area of the brain once thought to govern only motor skills, may also play an important role in spatial learning, associative skills, and language processing, and that development in each area may reinforce the others.

All of this suggests that America's schools should be doing much more to engage students in vigorous physical activity than they do now. Yet just the opposite is happening. In some school districts, as few as 16 percent of students have been found to be physically fit. More than a third of young people in grades 9-12 do not regularly engage in vigorous physical activity, and more than 10 percent get no physical activity at all.

The U.S. Centers for Disease Control and Prevention have reported that between 1991 and 1995, the percentage of students attending daily physical education classes dropped from 42 percent to 25 percent, and has risen only slightly since. The reason? State standards and testing programs have placed new academic demands on schools, a trend that the federal No Child Left Behind Act of 2001, with its "adequate yearly progress" goals, has accelerated.

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Faced with these pressures and tighter finances, schools are putting all their resources into "teaching to the tests" and eliminating the so-called extras. For example, in Yonkers, N.Y., the city has eliminated 233 athletic, visual-arts, vocal, and instrumental-music programs. Across New York state, districts are instituting hiring freezes and cutting sports and preschool programs. And the National Education Association found that California, the first state in the country to require physical education in its public schools, is now averaging 43 students per gym class. In Los Angeles, many gym classes now exceed 70 students per teacher—double the recommended size.

I'm not suggesting that schools alone can solve America's physical fitness crisis. Indeed, reports released this fall by the American Academy of Pediatrics and the Institute of Medicine offer a number of important recommendations about what parents and the community can do to stem the obesity epidemic and ensure the fitness and health of children. But schools do have an important—perhaps critical—stake in children's health if they want to achieve academic goals.

And as long as schools are tightening their belts instead of their students' waistlines, I'm afraid every child will be left behind.

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